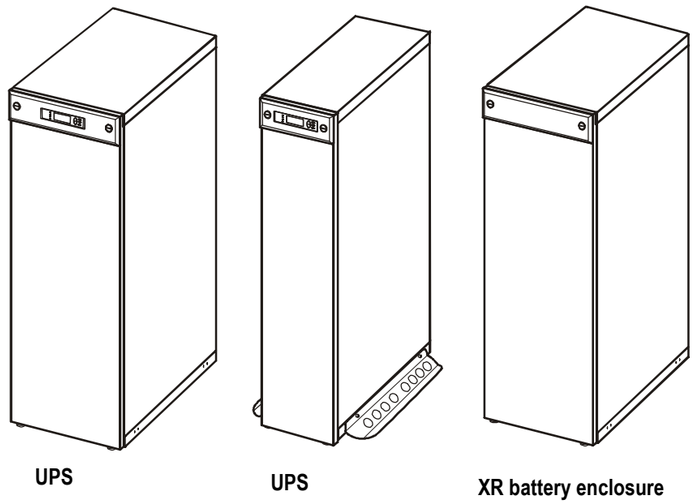
Installation

MGE™ Galaxy™ 3500
10-30 kVA 208/220 V with batteries



IMPORTANT SAFETY INSTRUCTIONS - SAVE THESE INSTRUCTIONS

Warning: ALL safety instructions in the Safety Sheet (990-2940) must be read, understood and followed when installing the UPS system. Failure to do so could result in equipment damage, serious injury, or death.

Warning: After the UPS has been electrically wired, do not start it up. Start-up is commissioned to authorized personnel from Schneider Electric.

Caution: All electrical power and power control wiring must be installed by a qualified electrician, and must comply with local and national regulations for maximum power rating.

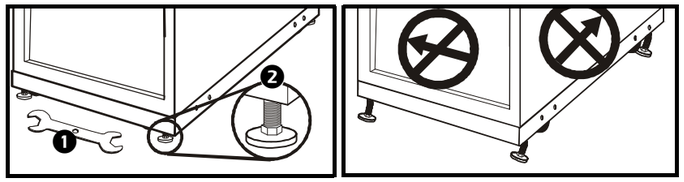
Note: Ensure that the unit is in its final location prior to installation.

Note: Battery and utility power must not be connected until all other wiring has been completed.

See Also: For parallel configurations see manual 990-3568.

Level the Enclosure

Warning: The system must be installed on a level floor. The leveling feet will stabilize the enclosure, but will not account for a badly sloped floor.



❶ Use a 13/14 mm wrench to adjust the four leveling feet.

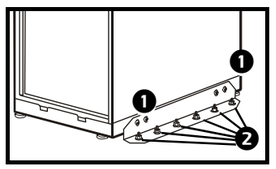
❷ Ensure that the system is level.

Caution: Do not move the enclosure after the leveling feet have been lowered.

Floor Anchoring (if applicable)

Anchor the UPS enclosure to the floor

Note: Floor-anchoring bolts are not provided with the UPS. Purchase the bolts locally (minimum size: M8). Follow the specifications given by the manufacturer of the floor anchoring system when bolting the UPS system to the floor.

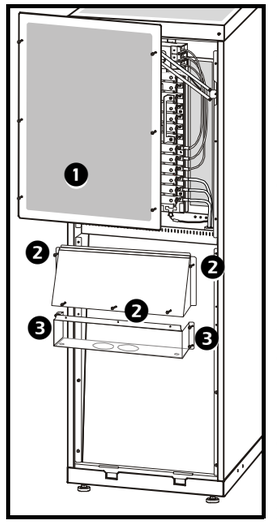


❶ Reuse the two transport brackets (one on each side) that were used to secure the UPS to the pallet during transport.

❷ Drill two to six holes in the floor for each bracket. Attach with bolts.

Prepare for Cables

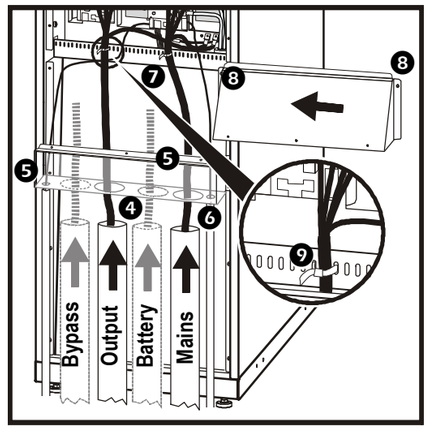
Bottom cable entry



❶ From the rear of the UPS, loosen the six M4 screws from the upper cover (the cable landing area), and remove. Save the screws for later use.

❷ Loosen the two M4 screws (one on each side) from the top part of the conduit box. Loosen the M4 screws attaching it to the bottom part (two screws in a 352 mm (13.8 in) enclosure), (three screws in a 523 mm (20.50 in) enclosure) and remove. Save the screws for later use.

❸ Loosen the four M4 screws (two on each side) from the conduit box bottom and remove. Save the screws for later use.



❹ Punch as many holes as needed in the marked areas of the bottom conduit box.

❺ Attach the conduit box bottom to the enclosure (reuse the screws from step ❸).

❻ Attach conduits to the conduit box.

❼ Run the cables through the conduits, the bottom of the conduit box, and up into the cable landing area.

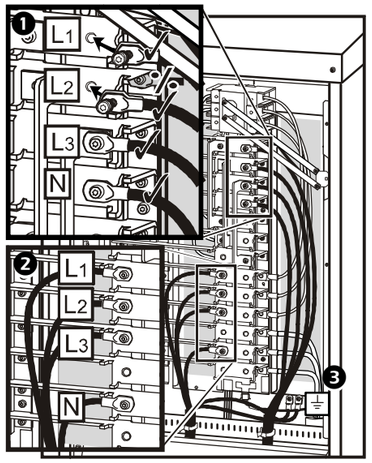
❽ Attach the conduit box top to the conduit box bottom, and to the enclosure reusing the screws from step ❷.

❾ Fasten the cables with cable ties.

Connect the AC Input and AC Output Cables

Warning: Use compression type lugs ONLY. Do not loosen or add cables to any factory preinstalled cables on busbars. Use upper part of busbar for connection only.

Single mains

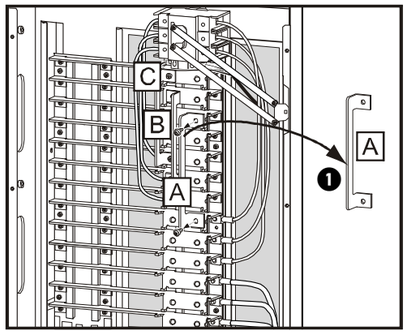


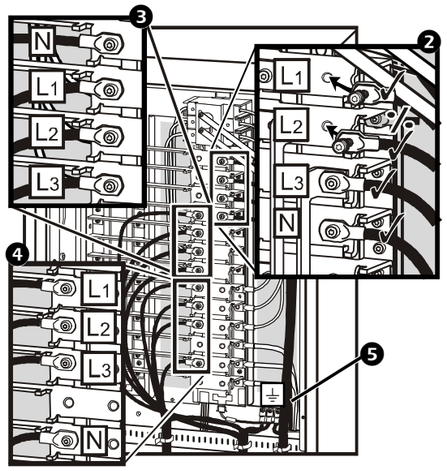
❶ Connect the AC input cables and the neutral to the input cable landings.

❷ Connect the AC output cables and the neutral to the output cable landings.

❸ Connect the ground cables to the studs (earth symbol beneath) using a screw.

Dual mains





❶ Remove the three busbars A, B, and C by removing two M6 screws from each busbar.

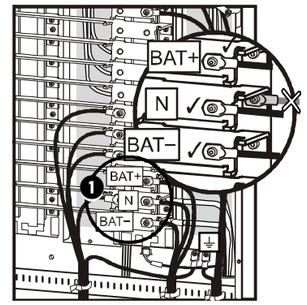
❷ Connect the AC input cables and the neutral to the input cable landings.

❸ Connect the bypass cables and the neutral to the bypass cable landings.

❹ Connect the output cables and the neutral to the output cable landings.

❺ Connect the ground cables to the studs (earth symbol beneath) using a screw.

Connect the DC Battery Cables (if applicable)



❶ Connect battery cables BAT+, BAT–, and N to the battery cable landings.

Connect the Communication Cables

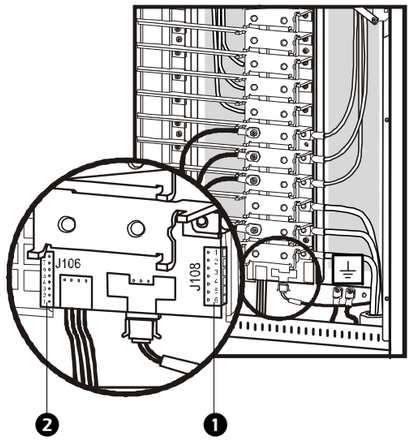
Warning: Make sure that the UPS is completely OFF as the connectors are very close to the power busbars.

J106 and J108 pin connections

Note: The UPS must be connected to either a dry contact or a 24 VDC EPO (Emergency Power Off) switch.

Note: The external EPO +24 VDC, 1500 mA circuit can be supplied through other vendors.

Note: Always follow the pin connection procedures from the top and work down: J106 (8-1), J108 (1-6).



❶ **J108 pin connections:**

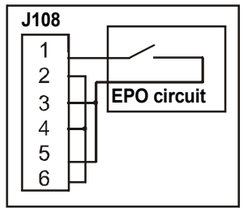
1 Normally open EPO
2 Normally open EPO return
3 Normally closed EPO
4 Normally closed EPO return
5 +24 V SELV supply
6 SELV ground

❷ **J106 pin connections:**

8 Ext. charging control return
7 External control of charging
6 Q3 active return
5 Q3 active
4 Battery measurement supply*
3 Battery unit quantity*
2 Max. battery temperature*
1 Battery measurement return*

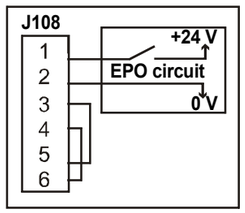
* Should be used with APC XR Enclosures

EPO wiring – pin connections J108. Connect the EPO cable using one of the following four wiring configurations.



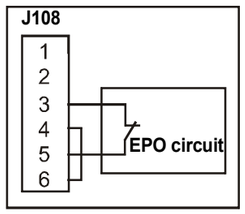
1: Dry Contacts Normally Open

EPO is activated when pin 1 is connected to pins 3 and 5.
Connections: 2-4-6, 3-5 and 1 (—✓•—)



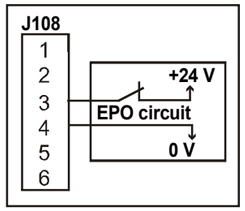
2: +24 V Normally Open

EPO is activated when an isolated SELV 24 VDC voltage is supplied on pin 1 with reference to pin 2.
Connections: 3-5 and 4-6.



3: Dry Contacts Normally Closed

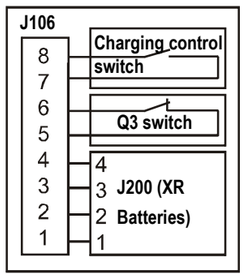
EPO is activated when a connection from pin 3 to pin 5 is opened.
Connections: 4-6.



4: +24 V Normally Closed

EPO is activated when a SELV 24 VDC voltage is removed from pin 3 with reference to pin 4.

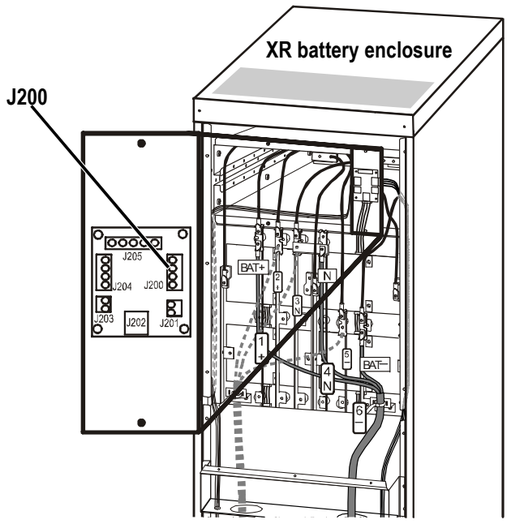
Pin connections J106 (UPS).



Pins 1 to 4 are for battery measurement (only applicable to MGE Galaxy 3500 XR Battery Enclosures (see J200 drawing).

Pins 5 and 6 are for external maintenance bypass Q3 (auxiliary switch N/C type).
When Q3 is closed, signals are fed back to the UPS controller (see Q3 drawing).

Pins 7 and 8 are for external charge control. When 7 and 8 are closed, the UPS charges batteries with a pre-defined percentage (0-25-50-75-100%) of the maximum charging power. To be used in generator applications, or if special codes require control of charging.
When Q3 is closed, signals are fed back to the UPS controller.



Note: When connecting the Q3 auxiliary signal, use gold-plated N/C auxiliary switch.

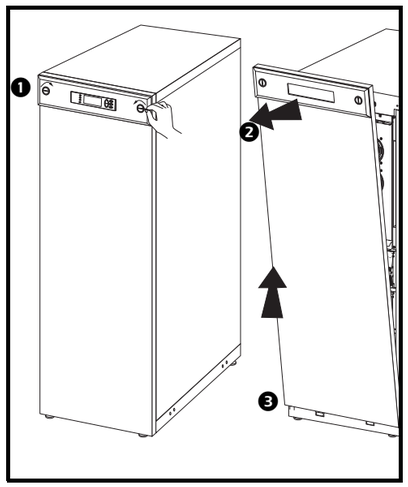
Note: Reinstall the cable landing cover.

Connect APC communication options

Note: The cable routing of the power chute software and the temperature sensor is identical.

Note: The temperature sensor is provided in a plastic bag attached to the front of the UPS behind the front panel.

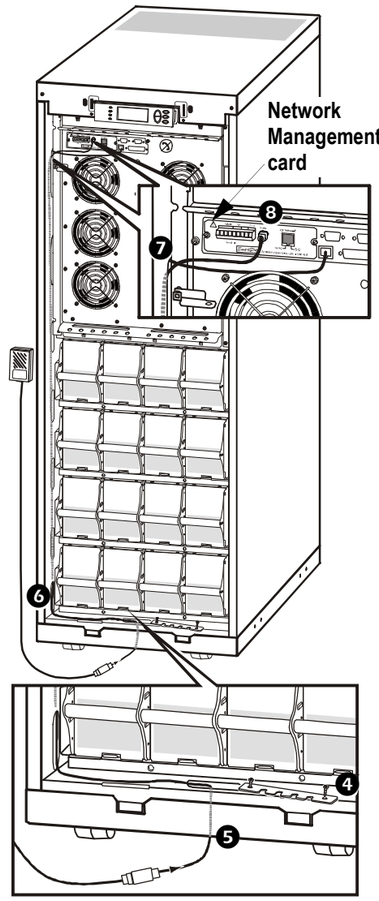
Front panel removal.



❶ Use a coin or similar to turn the two black lock devices on either side of the display in the direction of each other to a vertical positon.

❷ Push the front panel upwards and pull it outwards to disengage the locking device at the top of the enclosure.

❸ Lift the front panel free of the two slots at the bottom of the enclosure.



❹ Remove the two screws from the cable-inlet at the front and remove the cable-inlet plate.

❺ Guide the cable through the hole in the bottom plate and up through the cable-inlet.

❻ Guide the cable through the side panel hole and run the cable upwards inside the panel.

❼ Pull the cable out of the side panel through the hole closest to the Network Management Card area.

❽ Plug the cable into the probe socket / PowerChute inlet.

❾ Reattach the cable-inlet plate (❹).

Specifications

Warning: The UPS must be supplied from a 208/120 V or 220/127 V 4W + GND 60 Hz source.

AC input

	10 kVA		15 kVA	
UPS ratings	**208 V**	**220 V**	**208 V**	**220 V**
Input frequency (Hz)	40-70	40-70	40-70	40-70
Nominal input current (A)[1]	24.3	22.9	36.5	34.6
Max. input current (A)[2]	26.7	25.2	40.2	38.0
Input current limit (A)[3]	32.8	32.8	49.5	49.5

	20 kVA		30 kVA	
UPS ratings	**208 V**	**220 V**	**208 V**	**220 V**
Input frequency (Hz)	40-70	40-70	40-70	40-70
Nominal input current (A)[1]	48.2	45.5	72.9	68.9
Max. input current (A)[2]	53.0	50.1	80.1	75.8
Input current limit (A)[3]	65.2	65.2	98.8	98.8

AC output

	10 kVA		15 kVA	
UPS ratings	**208 V**	**220 V**	**208 V**	**220 V**
Nominal output current (A)	27.8	26.2	41.6	39.4

	20 kVA		30 kVA	
UPS ratings	**208 V**	**220 V**	**208 V**	**220 V**
Nominal output current (A)	55.5	52.5	83.3	78.7

Battery input

UPS ratings	10 kVA	15 kVA	20 kVA	30 kVA
Nominal voltage (V)	± 192	± 192	± 192	± 192
End voltage	1.6-1.75 V/cell (automatic, depending on load)			

Bypass input

	10 kVA		15 kVA	
UPS ratings	**208 V**	**220 V**	**208 V**	**220 V**
Input frequency (Hz)[4]	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10	50±10 or 60±10
Nominal input current (A)[1]	27.8	26.2	41.6	39.4

	20 kVA		30 kVA	
UPS ratings	**208 V**	**220 V**	**208 V**	**220 V**
Input frequency (Hz)[4]	60±10	60±10	60±10	60±10
Nominal input current (A)[1]	55.5	52.5	83.3	78.7

Notes
[1] Input current based on rated load and batteries fully charged.
[2] Input current based on full battery recharge, nominal voltage and rated load.
[3] Current limitation through electronic current limiting is based on full battery recharge and low input voltage.
[4] Synchronization adjustable: +/–10Hz, +/–3Hz or +/–0.1Hz.

Recommended cable sizes (AWG)

Warning: At 100% switch mode load, the neutral must be rated for 200% phase current.

Note: The recommended cable sizes are for a 30°C (86°F) temperature environment.

Caution: All wiring must comply with all applicable national and/or electrical codes.

Note: Use Molex lug type or equivalent, and crimp to manufacturer's specifications.

	Mains input [AWG]	AC output [AWG]	DC input [AWG], 75ºC Wire	Bypass input AWG
10 kVA	8	8	1	8
15 kVA	6	6	1	6
20 kVA	4	4	1	4
30 kVA	1	1	1	1

Recommended current protection

Note: AC input/output over-current protection and AC input/output disconnect must be provided by the customer.

	Dual[1,2]		Single	Any [3,4]
	Utility input	**Bypass input**	**Utility input**	**Output**
10 kVA	35 A breaker (30 kAIC)	35 A breaker (30 kAIC)	35 A breaker (30 kAIC)	35 A fast-acting class J fuse
15 kVA	60 A breaker (30 kAIC)	60 A breaker (30 kAIC)	60 A breaker (30 kAIC)	60 A fast-acting class J fuse
20 kVA	80 A breaker (50 kAIC)	80 A breaker (50 kAIC)	80 A breaker (50 kAIC)	80 A fast-acting class J fuse
30 kVA	125 A breaker (63 kAIC)	125 A breaker (63 kAIC)	125 A breaker (63 kAIC)	125 A fast-acting class J fuse

[1] If the available fault current of the installation is below 30 kA, a lower kAIC-rated breaker can be used.
[2] For breaker settings, refer to below table listing of available overload currents.
[3] If the available fault current of the installation is less than 1200 A for the 10 kVA and 15 kVA UPS, and below 2300 A for the 20 kVA and 30 kVA UPS, a breaker (of the same value as for the bypass input) can be used.
[4] Recommended maximum rating of a single-fuse configuration if the internal bypass is to be protected during a load short-circuit.

Recommended cable, lug and bolt sizes

Cable Size (AWG)	Cable Lug Type	Crimping Tool]	Die	Terminal Bolt Diameter
12	YA12CL2TC38	MD7-34R	W12CVT	6 mm / 0.2 in
8	YA8CL2TC38	MD7-34R	W8CVT	6 mm / 0.2 in
6	YA6CL2TC38	MD7-34R	W6CVT	6 mm / 0.2 in
4	YA4CL2TC38	MD7-34R	W4CVT	6 mm / 0.2 in
1	YA1CL2TC38	MD7-34R	W1CVT	6 mm / 0.2 in

Minimum breaker settings

	800% overload bypass operation	150% overload normal/ battery operation	125% overload normal/ battery operation	Continuously
10 kVA				
Mains input	–[1]	–	–	34 A
Bypass input	223 A	–	–	31 A
Output	223 A	42 A	35 A	31 A
Duration	500 ms	60 s	10 min.	∞
15 kVA				
Mains input	–[1]	–	–	51 A
Bypass input	333 A	–	–	46 A
Output	333 A	63 A	52 A	46 A
Duration	500 ms	60 s	10 min.	∞
20 kVA				
Mains input	–[1]	–	–	68 A
Bypass input	444 A	–	–	62 A
Output	444 A	84 A	70 A	62 A
Duration	500 ms	60 s	10 min.	∞
30 kVA				
Mains input	–[1]	–	–	99 A
Bypass input	667 A	–	–	92 A
Output	667 A	125 A	105 A	92 A
Duration	500 ms	60 s	10 min.	∞

[1] At single feed use the higher value of mains and bypass.

Torque specifications

The power wiring should be torqued to 7 Nm.

Contact Information

For local, country-specific centers: go to www.apc.com/support/contact.

Appendix

Wiring diagrams

Diagram with Maintenance Bypass Panel

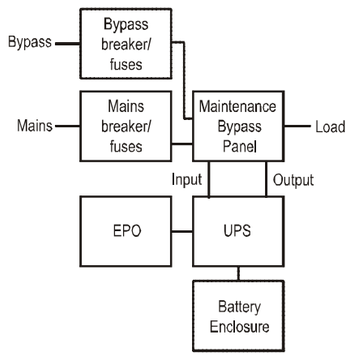


Diagram without Maintenance Bypass Panel